Project Title:	Metro DC Health Information Exchange (MeDHIX)
Principal Investigator:	Lewis, Thomas L., M. D.
Organization:	Primary Care Coalition of Montgomery County
Mechanism:	RFA: HS05-013: Limited Competition for AHRQ Transforming Health Care Quality through Information Technology (THQIT)
Grant Number:	UC1 HS 016130
Project Period:	09/05 – 09/09, Including No-Cost Extension
AHRQ Funding Amount:	$1,363,135
Summary Status as of:	December 2008

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Implementation and Use

Summary: The goal of this project is to develop and implement a health information exchange (HIE) spanning the Washington, DC, metropolitan area. The Metro DC Health Information Exchange (MeDHIX) project plans to implement an HIE that links the electronic health record (EHR) systems of safety net clinics in the region with each other and with mainstream health care providers, forming a regional community of interest focused on the specific and unique needs of the uninsured population and safety net environment. Although progress has been made in increasing adoption of EHR systems at clinics and hospitals, real leveraging of these data-collection systems does not begin until different points of care are able to freely transmit and exchange patient records, lab results, and other health care data. This HIE hopes to connect hospitals and clinics to third-party labs, improving continuity of care and patient safety.

The initial focus of MeDHIX will be in providing emergency department (ED) clinicians with health information, including medication data, from the safety net clinics and providing these safety net clinicians with similar health information from the EDs to increase the knowledge base on which the clinician makes assessments and medication decisions, ultimately improving patient safety and quality of care. Additionally, MeDHIX will focus on reducing duplicative labs and procedures and reducing unnecessary visits to the EDs.

MeDHIX will be implemented in phases. The first phase will leverage existing technology to deploy a significant subset of provider participants to address the issues of cross-jurisdictional, cross-enterprise HIE. The second phase will be paced with the promulgation of standards, protocols, and operating guidelines necessary for smaller-scale Community of Interest HIEs, such as MeDHIX, to interoperate within the evolving Regional Health Information Exchange and National Health Information Network environment. The third phase will further refine the HIE technology as standards evolve and will extend the number of regional participants. From the first phase onward, enhanced data will be available for public health planning, epidemiological surveillance, and targeting of services to the low-income uninsured.

Specific Aims

- Create a governance structure for an HIE operating across multiple States. **(Ongoing)**
- Develop documents delineating terms and conditions of use. **(Achieved)**
- Facilitate distribution of laboratory test results to clinical sites. **(Achieved)**

- Use MeDHIX infrastructure to support patient-centered care (PCC) quality and reporting initiatives. **(Achieved)**
- Implement a Web-based "eChart" clinical summary to permit ED physicians and specialists to view an abstract of the integrated shared Community HealthLink (CHL) Care EHR. **(Achieved)**
- Connect clinics and hospitals to MeDHIX with full two-way exchange functionality. **(Upcoming)**

2008 Activities: A major goal for 2008 was to incorporate aspects of governance, tri-jurisdictional legal requirements, privacy protections, hospital and clinic workflow and use cases, and safety net patient picture ID cards into the eChart design and workflow. An example of the use of the eChart to facilitate access to pertinent clinical information, while documenting appropriate privacy protection and conforming to hospital policy, is the stepwise access to various levels of protected health information within the eChart with easy documentation of compliance as increasingly protected types of information need to be viewed. Governance work was also completed in conjunction with this activity. For the MeDHIX terms and conditions, the project decided to use the less complex Community HealthLink agreement, as the safety net clinics and patients were familiar with the process and had not experienced problems when explaining it to a diverse population.

In the next phase of the project, all five county hospitals and 10 safety net clinics are collaborating to identify patients receiving emergency room (ER) care who could be treated more effectively and at less cost in a primary care clinic. This "ER diversion" project is expected to result in substantial benefits in the form of greater care continuity and lower costs as clinics and hospitals share data more effectively. The MeDHIX technology and eChart are in place, with the first hospital and clinic ready to share data as soon as the final legal documents are approved. Up to five hospitals and 10 safety net clinics will join as the ER diversion project evolves over the next year, 2009. Additional funding for this project extension was provided by the Centers for Medicare and Medicaid Services (CMS) as a direct result of the demonstration of accomplishments in predecessor-specific aims of this AHRQ-funded MeDHIX work in this grant.

Based on knowledge gained from the AHRQ-funded MeDHIX work, the MeDHIX principal investigator (PI) was asked to co-chair one of two groups commissioned to advise the State of Maryland on a comprehensive strategy and architecture for creating and sustaining a single statewide HIE. The two groups will submit final reports in February 2009. The focus of our group, the Montgomery County Health Information Exchange (MCHIE), was on how to effectively incorporate community hospitals and low income, uninsured, culturally, linguistically, and ethnically diverse groups into a statewide HIE.

In addition, the project completed the process of facilitating distribution of laboratory test results to clinical sites. MeDHIX completed the certification process with Quest and is receiving labs for Muslim, Proyecto Salud, Spanish Catholic Center, and Peoples. The project also completed the database modifications required to more efficiently accept Quest Data, migrated the legacy data, transformed some of the data from inconsistent texts to standardization similar to Quest, modified the CHLCare screens to allow more efficient manual data entry and review of lab data, updated the reporting table storing procedures to work with the new database, modified the existing reports, modified relevant forms, and deployed a Web tool to allow the clinics to manage Quest labs that failed to download due to inability to match to the patient.

Preliminary Impact and Findings: So far the project has been able to create a technical infrastructure and robust user interface, deploy an ID card process, draft MeDHIX terms and conditions, draft a governance recommendation, and deploy a Quest Lab interface. The team is optimistic, particularly since a receptive environment to engage in active negotiations for an exchange is emerging as of the end of 2008. Previously, many of the health systems have been hesitant to engage in the cost of aligning with one of the multiple HIE initiatives underway in the area. In addition, the HIE initiatives and health systems have been waiting for leadership from both national and State organizations, especially as related

to standards. Although, the original focus of providing patient information to local EDs to support patient safety, quality of care, and health care efficiency initiatives has not evolved as rapidly as planned, opportunities have arisen to leverage the MeDHIX technology to support other processes and programs in parallel with the original plans. Remarkably, the capabilities of the MeDHIX infrastructure are diverse and continue to grow.

The project is beginning to see a transition in the perceived benefits and risks of HIE. Hospitals and physicians have tended to see great benefit in sharing clinical information on safety net patients because they often receive fragmented care in multiple places. For these patients, the benefits in improved care, reduced cost, and reduced risk to the patients from duplicative procedures were evident and potentially substantial. So the cost/benefit assessment was considered quite beneficial by virtually all participants. In contrast, little benefit from HIE was perceived for insured patients, as they typically had a much smaller number of providers and those providers communicated quickly and effectively with one another. For these patients, the perception was that the benefits of HIE to the patient or provider were likely to be small and the risk of inadvertent disclosure of confidential information likely to outweigh any benefit from HIE. There has been some evolution of this thinking toward a perception of more benefits from HIE in more patient subsets, led by ER physicians. One ER physician even observed that access to the eChart that is available for safety net patients had the potential for him to provide higher quality acute intervention care to the safety net clinic patients than he would be able to provide to insured patients.

In a recent parallel HIE initiative, it was recognized that community leaders and health systems promoted an "opt-in" methodology, while public health programs were adamant that the process be "opt-out." The core issue revolves around having a critical mass of data. There is a perception that patients will be less apt to initiate an opt-in process, which requires an active action on their part, versus the more passive business process where all patients' data are exchanged through the network unless they actively opt-out, thus creating a robust critical mass of data. Anecdotal feedback indicates that our safety net patient population rarely declines the opportunity to share health information within MeDHIX and Community HealthLink. This suggests that moving to an opt-out process would be acceptable to patients, more efficient administratively, and make more clinical data more easily available for improved direct care and care coordination.

Of the many project challenges, two are especially noteworthy. The first is harmonizing complex and often conflicting laws and regulations governing the sharing of health information among the three jurisdictions. Not only are the differences themselves complex, but different attorneys often interpreted the laws and regulations differently, compounded by changing interpretations as new clinics joined or new attorneys advised an existing clinic. This regularly delayed data exchange activities that were technically ready. Until such legal issues can be resolved locally, at the State level, and nationally, progress in reaching the theoretical benefits of HIE is likely to be slow and costly. In spite of the substantial, laudable, and expensive Federal efforts to date, there is little evidence that there has been significant progress at the local level in expeditious resolution of legal concerns.

The second challenge was the need to develop a system of positive identification for the low income, uninsured clinic patients. By definition, they did not have insurance cards and often lacked a photo identification (ID) card. This placed an added procedural burden and legal risk on hospitals to confirm the patient's identity and consent to share information from the medical record. While unexpected, this problem eventually led to a positive solution—designing and implementing a method for creating picture ID cards for clinic patients and incorporating the pictures into the EHR. Adding picture ID card capability to the shared EHR resolved legal concerns about identification and consent because hospitals now know the primary care clinic and can access the patient's history. They also know the patient has been counseled about the benefits and risks of sharing personal health information.

On a positive note, the ability to share information across the safety net clinics has led to a quantum shift in the way these clinics operate: they now work together instead of alone to provide care to patients who often have multiple complex medical problems. Now safety net clinics routinely track key quality measures; Medical Directors meet regularly to develop and share quality measures and look for ways to improve on the quality of care they provide.

Selected Outputs

The project has prepared an assessment of information-sharing regulations in Maryland, Virginia, and the District of Columbia, as well as developing governance documents and Terms and Conditions for patients.

AHRQ 2008 Annual Conference presentation: Metro DC Health Information Exchange (MeDHIX) Characteristics, Challenges, Lessons Learned (PowerPoint® File, 1 MB; Web Version). September 2008, Bethesda, MD.

Grantee's Most Recent Self-Reported Quarterly Status: The project has faced a number of challenges, including the fact that the IT infrastructure on which MeDHIX was founded became available for deployment in the third quarter of the third and final year (2009) rather than in Year 1 as defined in the original plan. The loss of the MeDHIX infrastructure in the fourth quarter of the first year had severe implications on the project strategy. The positive lesson from this experience is that large hospitals, on whom this HIE was initially dependent, may have their own agendas, with little understanding of the different clinical and organizational perspectives of community hospitals. It also strongly suggests that Regional Health Information Organizations (RHIOs) dominated and operated by one or more large hospitals may not be the most effective or inclusive model. Regardless, many of the project objectives have been achieved.

Milestones: Progress is on track in some respects but not others.

Budget: Somewhat under spent, approximately 5 to 20 percent.